CLAIMS

1. A hydraulic antivibration device comprising a first attachment fitting, a cylindrical second attachment fitting, a vibration-isolating base connecting the second attachment fitting and the first attachment fitting together and composed of a rubber-like elastomer, a diaphragm attached to the second attachment fitting and forming a liquid-filled chamber between the diaphragm and the vibration-isolating base, a partition comparting the liquid-filled chamber into a first liquid chamber on the vibration-isolating base side and a second liquid chamber on the diaphragm side, and an orifice bringing the first liquid chamber and the second liquid chamber into communication with each other, the partition including an elastic partition membrane and a pair of sandwiching members pinching and holding a peripherally marginal portion of the elastic partition membrane from both faces thereof,
which device is characterized in that the sandwiching members include a plurality of openings pierced on the first liquid chamber side and on the second liquid chamber side and displacement-regulating ribs regulating the displacement of the elastic partition membrane formed alongside of peripheral margins of the respective openings;
the elastic partition membrane includes displacement-regulating protrusions that are provided at least on one face side thereof so as to protrude from there and disposed in positions corresponding to at least a part of the displacement-regulating ribs of the sandwiching members.

2. The hydraulic antivibration device as set forth in claim 1, characterized in that the displacement-regulating protrusions of the elastic partition membrane are provided on both faces thereof and are disposed in positions corresponding to at least a part of the displacement-regulating ribs of the respective sandwiching members.

3. The hydraulic antivibration device as set forth in claim 1 or 2, characterized in that the displacement-regulating protrusions of the elastic partition membrane are configured so that tops thereof may abut on the displacement-regulating ribs of the sandwiching members.

4. The hydraulic antivibration device as set forth in any one of claims 1 to 3, characterized in that the displacement-regulating ribs of the sandwiching members are of a plurality of radial ribs arranged in a radial fashion relative to an axis center of the sandwiching members; and
the displacement-regulating protrusions of the elastic partition membrane are provided in positions corresponding to at least a half or more of a plurality of the radial ribs.

5. The hydraulic antivibration device as set forth in any one of claims 1 to 3, characterized in that the displacement-regulating ribs of the sandwiching members include annular ribs disposed in an annular fashion relative to an axis center of the sandwiching members and a plurality of linking ribs joining the annular ribs to outer peripheries of the sandwiching members and disposed in a radial fashion relative to the axis center of the sandwiching members; and

the displacement-regulating protrusions of the elastic partition membrane are disposed only in positions corresponding to the annular ribs and the number of the linking ribs is four or less.

6. The hydraulic antivibration device as set forth in any one of claims 1 to 3, characterized in that the displacement-regulating ribs include annular ribs disposed in an annular fashion relative to the axis center of the sandwiching members and a plurality of linking ribs joining the annular ribs to outer peripheries of the sandwiching members and disposed in a radial fashion relative to the axis center of the sandwiching members; and
the displacement-regulating protrusions of the elastic partition membrane are provided in positions corresponding to the annular ribs and in positions corresponding to at least one linking rib or more, of a plurality of the linking ribs.

7. The hydraulic antivibration device as set forth in claim 6, characterized in that assuming the number of said linking ribs to be n, the displacement-regulating protrusions of the elastic partition membrane are provided in positions corresponding to the annular ribs and in positions corresponding to the linking ribs of [n/2 – 1 (n: even number) or (n + 1)/2 – 1 (n: odd number)] or upwards, among the linking ribs of n pieces.

8. The hydraulic antivibration device as set forth in claim 6 or 7, characterized in that assuming the number of said linking ribs to be n, the displacement-regulating protrusions of the elastic partition membrane are provided in positions corresponding to the annular ribs, and in positions corresponding to the linking ribs of (n – 2) or upwards, wherein 2 is deducted from the total number, n, of the linking ribs.

9. The hydraulic antivibration device as set forth in any one of claims 4 to 8, characterized in that the displacement-regulating ribs or the annular ribs and the linking ribs are formed integrally with the sandwiching members.

10. An elastic partition membrane characterized in that it is employed for the hydraulic antivibration device as set forth in any one of claims 1 to 9.

11. A pair of sandwiching members characterized in that they are employed for the hydraulic antivibration device as set forth in any one of claims 1 to 9.

ABSTRACT

A hydraulic antivibration device is provided that is capable of reducing greatly strange sound upon inputting of high amplitude while meeting both a low dynamic spring characteristic upon inputting of low amplitude and a high damping characteristic upon inputting of high amplitude. According to